

# DRP® Reflectors

*THE HIGHEST DIFFUSE REFLECTANCE  
IN THE WORLD*

## **Features and Benefits**

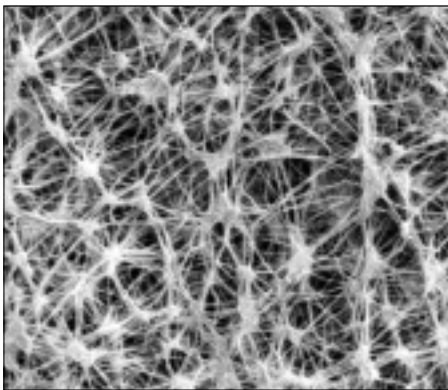
Highest reflectance .....	Maximizes light output and efficiency
Highly diffuse .....	Maximizes uniformity
Inert, stable material .....	Non-yellowing, maintains performance
Supplied ready-to-install .....	Easy installation

## **Applications**

LCD Backlighting

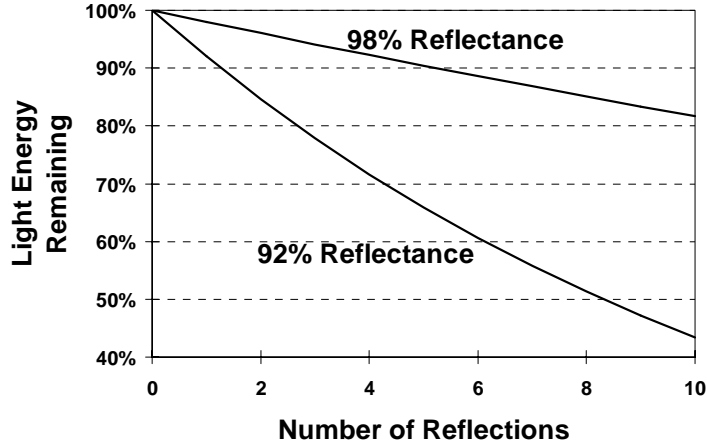
**Why are DRP® Reflectors so reflective?**

The answer lies in the microporous structure of this proprietary material. Light reflects and refracts from fibril to fibril within this structure. This is the same reason snow reflects light whereas water does not. The microporous structure, optimized for maximum reflectance, is made from a durable, non-yellowing polymer called PTFE.



5000x SEM of  
DRP® Reflector

**IMPORTANCE OF  
HIGH REFLECTANCE**



**Why is high reflectance important?**

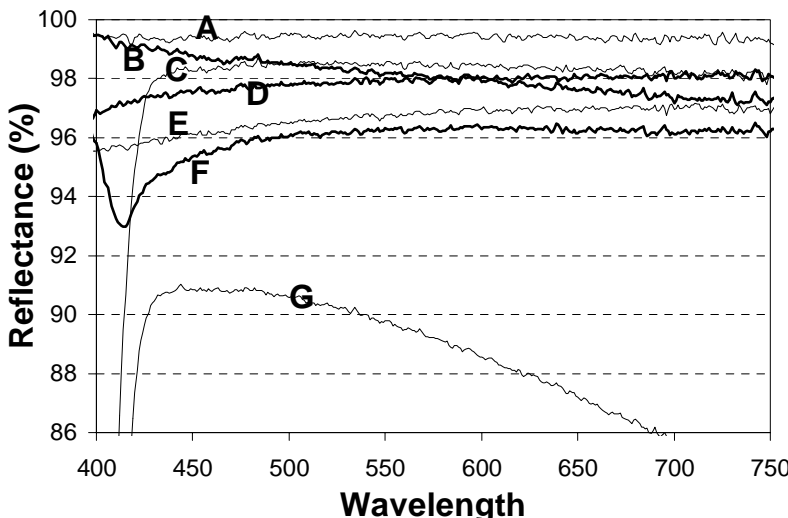
Every time a ray of light reflects, some light energy is lost. If an optical design causes more than one reflection to occur, a poor reflector can absorb a significant amount of total energy. This is why a small difference in reflectance can make a big difference in total light output.

**How reflective are  
DRP® Reflectors?**

Simply put, of the diffuse materials, DRP® Reflectors are the highest reflectance material in the world.

- A 3.0 mm DRP® Reflector
- B 0.5 mm DRP® Reflector
- C 0.25 mm DRP® Reflector
- D Granular PTFE
- E Barium Sulfate
- F Microporous Polyester
- G Powder Coating

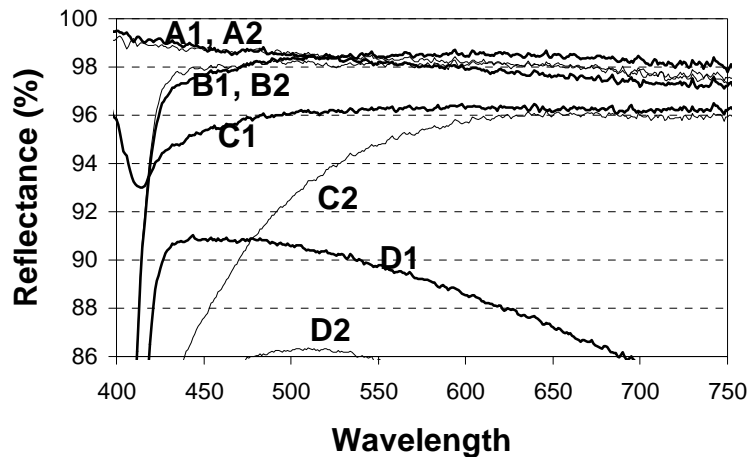
**REFLECTANCE OF  
DIFFUSE MATERIALS**



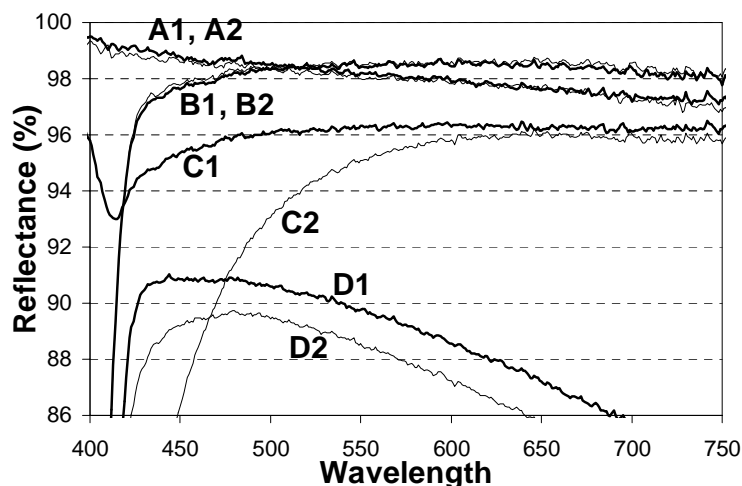
Exposure: 125°C for 60 days

- A1 0.5 mm DRP® Reflector before exposure
- A2 0.5 mm DRP® Reflector after exposure
- B1 0.25 mm DRP® Reflector before exposure
- B2 0.25 mm DRP® Reflector after exposure
- C1 Polyester before exposure
- C2 Polyester after exposure
- D1 Powder coating before exposure
- D2 Powder coating after exposure

## DEGRADATION DUE TO HEAT EXPOSURE



## DEGRADATION DUE TO UV EXPOSURE



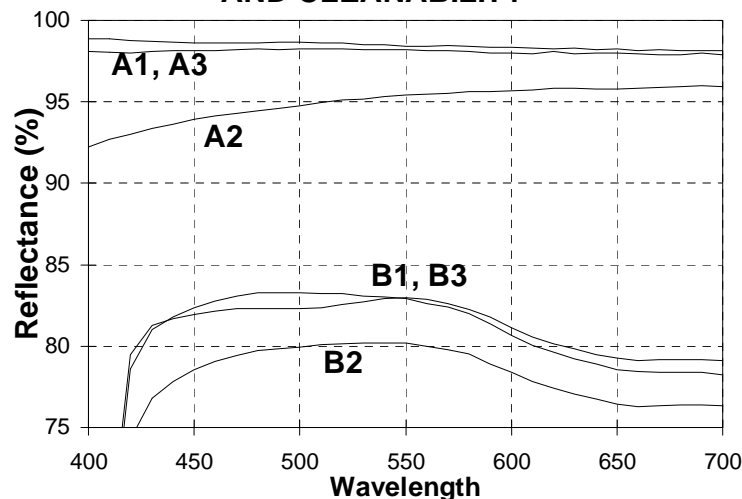
Exposure: ASTM G 53

- A1 0.5 mm DRP® Reflector before exposure
- A2 0.5 mm DRP® Reflector after exposure
- B1 0.25 mm DRP® Reflector before exposure
- B2 0.25 mm DRP® Reflector after exposure
- C1 Polyester before exposure
- C2 Polyester after exposure
- D1 Powder coating before exposure
- D2 Powder coating after exposure

Exposure: Production atmosphere for 6 months; Cleaned by wiping with a clean, damp cloth

- A1 0.5 mm DRP® Reflector before exposure
- A2 0.5 mm DRP® Reflector after exposure
- A3 0.5 mm DRP® Reflector after exposure and cleaning
- B1 White spray paint before exposure
- B2 White spray paint after exposure
- B3 White spray paint after exposure and cleaning

## DIRT DEPRECIATION AND CLEANABILITY



## **Other Material Properties**

### **Continuous use operating temperature**

& Material without adhesive	288°C
& Material with silicone adhesive	250°C
& Material with acrylic adhesive	170°C

### **Thermal conductivity**

0.04 W/m\*°K

### **Flammability**

Does not propagate a flame

### **Chemical resistance**

Unaffected by virtually all chemicals

### **Fluorescence**

Essentially none

### **Diffuseness**

Highly lambertian

### **Water resistance**

Highly hydrophobic

### **Dimensional tolerances**

+/- 0.020"

### **Dimensional shrinkage**

< 1%

## **Reflector Supply Options**

- & Supplied pre-fabricated to exact size and shape required for the application.
- & Supplied with or without pressure sensitive adhesive.
- & Supplied as individual reflector parts in bulk packaging.
- & Individual parts on a tape reel possible for large volumes.

## **Reflector Installation**

DRP® Reflectors can be easily installed by hand, or by using simple vacuum fixturing techniques developed by Gore. Process can be manual assist or fully automated.

